# RECOMMENDATIONS

Recommendations for administration of vaccines and other immunobiologic agents to HCWs are organized in three broad disease categories:

- those for which active immunization is strongly recommended because of special risks for HCWs (i.e., hepatitis B, influenza, measles, mumps, rubella, and varicella);
- those for which active and/or passive immunization of HCWs may be indicated in certain circumstances (i.e., tuberculosis, hepatitis A, meningococcal disease, typhoid fever, and vaccinia) or in the future (i.e.,pertussis); and
- those for which immunization of all adults is recommended (i.e., tetanus, diphtheria, and pneumococcal disease).

## Immunization Is Strongly Recommended

ACIP strongly recommends that all HCWs be vaccinated against (or have documented immunity to) hepatitis B, influenza, measles, mumps, rubella, and varicella (Table 2). Specific recommendations for use of vaccines and other immunobiologics to prevent these diseases among HCWs follow.

### *Hepatitis B*

Any HCW who performs tasks involving contact with blood, blood-contaminated body fluids, other body fluids, or sharps should be vaccinated. Hepatitis B vaccine should always be administered by the intramuscular route in the deltoid muscle with a needle 1–1.5 inches long.

Among health-care professionals, risks for percutaneous and permucosal exposures to blood vary during the training and working career of each person but are often highest during the professional training period. Therefore, vaccination should be completed during training in schools of medicine, dentistry, nursing, laboratory technology, and other allied health professions, before trainees have contact with blood. In addition, the OSHA Federal Standard requires employers to offer hepatitis B vaccine free of charge to employees who are occupationally exposed to blood or other potentially infectious materials (*27*).

Prevaccination serologic screening for previous infection is not indicated for persons being vaccinated because of occupational risk unless the hospital or health-care organization considers screening cost-effective. Postexposure prophylaxis with hepatitis B immune globulin (HBIG) (passive immunization) and/or vaccine (active immunization) should be used when indicated (e.g., after percutaneous or mucous membrane exposure to blood known or suspected to be HBsAg-positive [Table 3]).

Needlestick or other percutaneous exposures of unvaccinated persons should lead to initiation of the hepatitis B vaccine series. Postexposure prophylaxis should be considered for any percutaneous, ocular, or mucous membrane exposure to blood in the workplace and is determined by the HBsAg status of the source and the vaccination and vaccine-response status of the exposed person (Table 3)(*1,18*).

If the source of exposure is HBsAg-positive and the exposed person is unvaccinated, HBIG also should be administered as soon as possible after exposure

**TABLE 3. Recommended postexposure prophylaxis for percutaneous or permucosal exposure to hepatitis B virus, United States**

| Vaccination and antibody response status of exposed person | Treatment when source is | | |
|---|---|---|---|
| | HBsAG* positive | HBsAg negative | Source not tested or status unknown |
| Unvaccinated | HBIG† x 1; initiate HB vaccine series § | Initiate HB vaccine series | Initiate HB vaccine series |
| Previously vaccinated: | | | |
| Known responder¶ | No treatment | No treatment | No treatment |
| Known non-responder | HBIG x 2 or HBIG x 1 and initiate revaccination | No treatment | If known high-risk source, treat as if source were HBsAg positive |
| Antibody response unknown | Test exposed person for anti-HBs**<br>1. If adequate¶, no treatment<br>2. If inadequate¶, HBIG x 1 and vaccine booster | No treatment | Test exposed person for anti-HBs<br>1. If adequate¶, no treatment<br>2. If inadequate¶, initiate revaccination |

*Hepatitis B surface antigen.
†Hepatitis B immune globulin; dose 0.06 mL/kg intramuscularly.
§Hepatitis B vaccine.
¶Responder is defined as a person with adequate levels of serum antibody to hepatitis B surface antigen (i.e., anti-HBs ≥ 10 mIU/mL); inadequate response to vaccination defined as serum anti-HBs < 10 mIU/mL.
**Antibody to hepatitis B surface antigen.

(preferably within 24 hours) and the vaccine series started. The effectiveness of HBIG when administered >7 days after percutaneous or permucosal exposures is unknown. If the exposed person had an adequate antibody response (≥10 mIU/mL) documented after vaccination, no testing or treatment is needed, although administration of a booster dose of vaccine can be considered.

One to 2 months after completion of the 3-dose vaccination series, HCWs who have contact with patients or blood and are at ongoing risk for injuries with sharp instruments or needlesticks should be tested for antibody to hepatitis B surface antigen (anti-HBs). Persons who do not respond to the primary vaccine series should complete a second three-dose vaccine series or be evaluated to determine if they are HBsAg-positive. Revaccinated persons should be retested at the completion of the second vaccine series. Persons who prove to be HBsAg-positive should be counseled accordingly (*1,16,121,173*). Primary non-responders to vaccination who are HBsAg-negative should be considered susceptible to HBV infection and should be counseled regarding precautions to prevent HBV infection and the need to obtain HBIG prophylaxis for any known or probable parenteral exposure to HBsAg-positive blood (Table 3). Booster doses of hepatitis B vaccine are not considered necessary, and periodic serologic testing to monitor antibody concentrations after completion of the vaccine series is not recommended.